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Supplemental

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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application Number: 09/693,652
Filing Date: October 21, 2000
Appellant(s): HEIN ET AL.

William D. Davis
For Appellant

**Revised EXAMINER'S ANSWER**

This is in response to the appeal Brief filed 3/14/05.

*(1) Real Party in Interest*

A statement identifying the real party in interest is contained in the Brief.

*(2) Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the Brief.

*(3) Status of Claims*

The statement of the status of the claims contained in the Brief is correct.

*(4) Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the Brief is correct.

The amendment after final rejection filed on 3/14/05 has been entered. Therefore, claims 17-20 are withdrawn from consideration.

*(5) Summary of Claimed Subject Matter*

The summary of claimed subject matter contained in the Brief is correct.

*(6) Grounds of Rejection to be Reviewed on Appeal*

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

*(7) Claims Appendix*

The copy of the appealed claims contained in the Appendix to the Brief is correct. Since the amendment after final rejection filed on 3/14/05 has been entered. Therefore, claims 17-20 are withdrawn from consideration.

*(8) Evidence Relied Upon*

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| 5,323,461 | Rosenbaum et al. | 06-1994 |
| 4,473,719 | Embree et al. | 09-1984 |

*(9) Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

*Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenbaum et al (5,323,461).

Consider claim 1. Rosenbaum teaches a method comprising providing subscriber loop pull-down circuitry (10-11) operating in a first voltage domain (either by C.O. battery BV or voltage CV derived from the controlled voltage generator 14; col. 3, ln. 64

to col. 4, ln. 2), wherein the subscriber loop pull-down circuit decreases at least one of a tip and a ring line current (approx. < 13mA) in response to a corresponding pull-down control signal (i.e., control signals 17-18); and providing control circuitry (15) operating in a second voltage domain (**only by C.O. battery (BV)**; col. 3, ln. 64 to col. 4, ln. 2) wherein the first and second voltage domains are substantially distinct (e.g., **BV ≠ CV in which BV = -48 volts and CV is in the range of -170 volts to +180 volts**. In case the line driver circuitry operating using the voltages provided by the CVG 14 (CV), the control circuit and the pull-down circuitry, e.g., line driver circuitry, operate in different and/or distinct voltage domains), wherein the control circuitry (control circuit 15; col. 2, ln. 5-68) varies the pull-down control signal in response to a sensed current (sensing circuit 12) corresponding to an associated one of a tip-pull down current and a ring pull-down current (a plurality voltage levels associated with the on-hook state, tables 1-2 or off-hook state e.g., off-hook current > 13mA, on-hook current < 13mA; col. 5, ln. 29-47; tables 1-2; col. 5, ln. 22 to col. 6, ln. 68; col. 8, ln. 39-65).

Consider claims 2-3. Rosenbaum further teaches a pull-up circuitry (10-11; mode 2, col. 5, ln. 29-47), wherein the pull-up circuitry increases the at least one of the tip and ring currents (to 20-50mA) in response to a corresponding pull-up control signal provided by the control circuitry (control signals 17-18).

Consider claim 4. The feedback isolation stage is met by the (line 16 and col. 3, ln. 51-63).

Consider claim 5. The control isolation stage is met by the controlled voltage generator (14).

Consider claim 6. Rosenbaum teaches a method comprising providing subscriber loop pull-down circuitry (10-11) operating in a first voltage domain (either by C.O. battery or voltage derived from the controlled voltage generator 14; col. 3, ln. 64 to col. 4, ln. 2), wherein the subscriber loop pull-down circuit decreases at least one of a tip and a ring line current (approx. < 13mA) in response to a corresponding pull-down control signal (control signals 17-18); and providing control circuitry operating in a second voltage domain (**only by C.O. battery**; col. 3, ln. 64 to col. 4, ln. 2) wherein the first and second voltage domains are substantially distinct (e.g., **BV ≠ CV in which BV = -48 volts and CV is in the range of -170 volts to +180 volts**. In case the line driver circuit operating using the voltages provided by the CVG 14, the control circuit and the pull-down circuitry, e.g., line driver circuitry, operate in different and/or distinct voltage domains), wherein the control circuitry (control circuit 15; col. 2, ln. 5-68) varies the pull-down control signal in response to a sensed current (sensing circuit 12) corresponding to an associated one of a tip-pull down current and a ring pull-down current (a plurality voltage levels associated with the on-hook state, tables 1-2 or off-hook state e.g., off-hook current > 13mA, on-hook current < 13mA; col. 5, ln. 29-47; tables 1-2; col. 5, ln. 22 to col. 6, ln. 68; col. 8, ln. 39-65). Rosenbaum further teaches a control isolation stage (control voltage generator 14) coupled to provide the pull-down control signal (18) from the control circuitry (15) to the pull-down circuitry (10); and a feedback isolation stage (sensing current 12 and feedback path 16).

Consider claim 19. Rosenbaum teaches a subscriber line interface circuit comprising a linefeed driver (10) responsive to pull-up and pull down control signals (18; col. 8, ln. 1-6) to vary at least a selected one of a tip and ring current of a subscriber loop

(col. 5, ln. 22 to col. 6, ln. 68; col. 8, ln. 39-65); and a signal processor (15) sensing a pull-down current (loop current; col. 7, ln. 63-65) of the selected one of the tip and ring lines into a battery feed mode, the signal processor generating pull-down control signals (17-18) for the selected current in response to the sensed pull-down current, wherein the linefeed driver does not reside within a same integrated circuit package as the signal processor (control circuit 15, fig. 1).

Consider claim 20. Col. 3, ln. 51-63 reads on the limitations of claim 20.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 7-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenbaum et al (5,323,461) in view of Embree et al (4,473,719).

Consider claim 7. Rosenbaum does not disclose the detail circuit of the pull-down circuitry.

Fig. 4 of Embree shows a pull-down transistor (111) coupled to the subscriber line (R) and a battery feed node (-48V) through a sense impedance (RS).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Embree into the teachings of

Rosenbaum in order to prevent false hook status indications caused by large longitudinal currents which may be induced in the communication pair (col. 2, ln. 13-17).

Consider claims 8-15. The current sensor illustrated in fig. 2 of Embree reads on the limitations of claims 8-15.

Consider claim 16. Rosenbaum in view of Embree does not explicitly teach the use of a FET; however, it was well known to one skilled in the art to use FETs, MOSFETs in place of bipolar junction transistor in order to achieve faster switching, and lower power consumption.

***(10) Response to Argument***

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| Regarding the Rosenbaum reference, appellant states "Rosenbaum does not teach or suggest pull-down circuitry operating in a first voltage domain, and control circuitry operating in a second voltage domain, wherein the first and second voltage domains are substantially distinct." | In contrast to appellant's assertions, the control circuit (15) operates in a first voltage domain (e.g., **supplied only by C.O. battery feed**, col. 3, ln. 67 to col. 4, ln. 2) and the line drive operates in a second voltage domain (e.g., **supplied either by the C.O. battery feed (BV = -48 volts) or voltages provided by the CVG 14 (CV = -170 to about +180 volts peak)**, col. 2, ln. 14-30). **In the case where the line driver is operating using the voltages provided by the CVG 14, the control** |

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| | **circuit and the line driver circuitry would operate in different or distinct voltage domains** (see table 1; **in mode 2 and modes 4-9, the line driver circuit 10 is supplied by the CVG 14 (CV)**; col. 5, ln. 22 to col. 6, ln. 68). Appellant further argues that the examiner is referring to current domains rather than voltage domains. In contrast to appellant's assertions, col. 2, ln. 5-58 and col. 3, ln. 51 thru col. 4, ln. 34 all disclose voltage domains (**BV versus CV**). Furthermore, V=IR. Therefore, there is always a relationship between V and I. This relationship is always true, regardless whether R is constant or not. |

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| Regarding the Rosenbaum reference, appellant further states "Rosenbaum is silent on the issue of integrated circuits." | In contrast to appellant's assertions, fig.1 and col. 7, ln. 63 to col. 8, ln. 12 imply and/or suggest that the control circuit 15 is a processor in the form of an IC (e.g., fig. 1 |

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| | shows one package (15) contains a digital-to-analog converter and digital control circuit or state machine). Fig. 1 clearly illustrates that the pull-down circuitry (10-11) does not reside within the same integrated circuit as the signal processor (controller 15). Furthermore, integrated circuit is defined as Chips contain from a few dozen to several million electronic components (transistors, resistors, etc.). The terms chip, integrated circuit and Micro-electronic are synonymous (see the attached definition). The digital control circuit or state machine as taught by Rosenbaum meets the definition of the Logic Chip and Analog/Digital Converter. (See the attached definition). |

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| Regarding the rejection of claims 7-16, appellant states that the examiner has failed | In response to applicant's argument that there is no suggestion to combine the |

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| to establish even a prima facie case of obviousness under 35 U.S.C 103. | references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Rosenbaum discloses a generic pull-down circuitry (e.g., line driver circuit 10-11). Embree discloses a detail circuit of a pull-down circuitry for the purposes of preventing false hook status indications caused by large longitudinal currents, which may be induced in the communication pair (col. 2, ln. 13-17). Furthermore, all that is required to show obviousness is that the appellant "make his |

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| | claimed invention merely by applying knowledge clearly present in the prior art. Section 103 requires us to presume full knowledge by the inventor of the prior art in the field of his endeavor." In re Winslow, 53 CCPA 1574, 1578, 365 F.2d 1017, 1020, 151 USPQ 48, 50-51 (1966). Under that test, appellant fails. No commercial success is claimed, nor is any other factor indicating non-obviousness shown to exist. Moreover, the test for combining references is not what the individual references themselves suggest but rather the combination of the disclosures taken as a whole would suggest to one of ordinary skill in the art, In re McLaughlin, 170 USPQ 209 (CCPA 1971). |

*(11) Conclusion*

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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November 21, 2005

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